

Appl. No. 10/708,983
Amdt. dated March 28, 2006
Reply to Office action of December 29, 2005

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

5 Listing of Claims:

1. (original): A method of fabricating a semiconductor device comprising:

 providing a substrate;

10 sequentially forming a first organic layer, a sacrificial layer, and a second organic layer on the substrate;

 performing a photolithography process for forming a predetermined pattern in the second organic layer;

15 utilizing the second organic layer as an etching mask for etching the sacrificial layer till a surface of the first organic layer is exposed, thus the predetermined pattern being transferred to the sacrificial layer;

 utilizing the sacrificial layer as an etching mask for etching the first organic layer till a surface of the substrate is exposed, thereby the predetermined pattern being transferred to the first organic layer;

20 utilizing the sacrificial layer and the first organic layer as an etching mask for etching the substrate, thereby transferring the predetermined pattern to the substrate; and

 removing the first organic layer by use of plasma.

25 2. (original): The method of claim 1 wherein the first organic layer is made of a material selected from the group consisting of low dielectric organic materials and spin-on glass (SOG).

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3. (original): The method of claim 1 wherein the plasma is selected from the group consisting of oxygen (O₂), nitrogen (N₂), hydrogen (H₂), argon (Ar), C_xF_y, C_xH_yF_z, and helium (He) plasma.
- 5 4. (currently amended): The method of claim 1 wherein the sacrificial layer is made of a ~~material selected from the group consisting of silicon nitride and silicon oxide.~~
5. (currently amended): The method of claim 1 wherein the second organic layer is made of an organic photoresist material capable of absorbing light sources with
10 wavelengths shorter than 248nm in deep UV regions ~~with a wavelength of 248nm and the less.~~
6. (original): The method of claim 1 wherein the second organic layer is suitable for an e-beam lithography process.
- 15 7. (original): The method of claim 1 wherein the substrate is selected from the group consisting of a silicon substrate, a metal substrate, and a dielectric layer.
8. (new): The method of claim 1 wherein the sacrificial layer is made of silicon oxide.
- 20 9. (new): The method of claim 1 wherein a thickness of the first organic layer is larger than a thickness of the second organic layer.
10. (new): The method of claim 1 wherein the sacrificial layer is removed concurrently
25 while etching the substrate.
11. (new): The method of claim 1 wherein the first organic layer is clean removed from the substrate by use of plasma.

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12. (new): The method of claim 1 wherein the method further comprises forming an anti-reflection layer on the sacrificial layer before forming the second organic layer.

5 13. (new): The method of claim 12 wherein the anti-reflection layer comprises organic materials.

14. (new): The method of claim 12 wherein the anti-reflection layer comprises inorganic materials.

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